C-4.9 Summarize the concept of chemical equilibrium and Le Châtelier's principle. (additional content/depth)

Revised Taxonomy Level 2.4 <u>Summarize</u> conceptual knowledge

Students did not address this concept in physical science

It is essential for students to

- Understand that equilibrium is a dynamic condition in which two opposing changes occur at equal rates in a closed system.
- Illustrate that equilibrium as it applies to
  - Reversible chemical reactions
  - Solubility
  - Phase change
- Understand and apply La Châtelier's Principle in reference to the following stresses
  - A change in concentration
  - A change in temperature
  - A change in pressure

Assessment

The revised taxonomy verb, summarize means "to abstract a general theme or major point" For this indicator, the major focus of assessment should be to insure that students have a conceptual understanding of systems in equilibrium and how they are affected by stress as described by La Châtelier's Principle. Students should be able to predict what will happen to a system which is stressed. Conceptual knowledge requires that students understand the interrelationships among the basic elements within a larger structure that enable them to function together. In this case, that students can explain in terms of the kinetic theory and according to principles of chemical reaction the effect that each of the three variables (concentration, temperature, and pressure) have on a given system.